UDC 622:621.395/.396(022).004

BIZIN, P. S., VERESCHAGIN, G. P., ROL'NIK, M. A.

"Mine Communication and Signaling"

Shakhtnaya svyaz' i signalizatsiya (cf. English above), Moscow, "Nedra," 1970, lsó pp, ill. 1 r, 23 kop (from RZh--Elektrosvyaz', No 6, June 1970, Abstract No 6.64.50K)

Translation: The distinctive features are considered of the explosive proof use of apparatus for mine communication. The organizational principles and new systems of dispatcher and general mine communication are given, and also the means of communication and signaling which assure operative direction of production processes with respect to the mining and transportation of coal. Communication systems at the period of construction of shafts [shakhta] are described and also the communication means during mine rescue operations. Methods of adjustment and operational maintenance for new communication are presented. Standard design solutions are presented for the arrangement in mines of the apparatus under consideration. The book is intended for specialists occupied with the planning, installation, and operation of apparatus for mining communication and signaling; it may also be useful to students of mining institutes and tekhnikums. 109 ill. 14 tab. 40 ref. Summary. 1/1

- 91 -

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

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UDC: 621,396.676.2

FURNANOV, B. M., ZVORYGIN, A. G., BIZIN, P. S., LEKHTMAN, L. N., Institute of Mining imeni A. A. Skochinskiy

"An Antenna"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 12, 1970, Author's Certificate No 266864, filed 21 Oct 68, pp 47-48

Abstract: This Author's Certificate introduces an antenna made in the form of a capacitor in the transmitter output circuit. As a distinguishing feature of the patent, the current in the antenna is increased by making it in the form of two insulating sheets (e. g. porolon) with an electrically conductive layer such as foil between them. This layer is one plate of the capacitor in the transmitter output circuit, and the other plate is the upper cover of the battery box in an electric locomotive.

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USSR

UDC: 621.382.002

CHAGULOV, V. S., GOYKHMAN, I. E., BLAGIDZE, Yu. M., NAKASHIDZE, G. A., ELIZ-BARASHVILI, O. A., Institute of Cybernetics, Academy of Sciences of the

"An Optron"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329602, Division H, filed 26 May 70, published 9 Feb 72, p 210

Translation: This Author's Certificate introduces an optron which contains a photoreceiver, an emitter and a shell. As a distinguishing feature of the patent, sealing is improved and optical coupling is provided between the receiver and the emitter by making the shell from transparent copolymers with a low index of refraction, and by filling the space between the photoreceiver and emitter with a polymerized copolymer with a high index of re-

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- 88 -

UDC: 662.998:536.4

BLAGINYA, F. V., KISELEV, G. A., KUTS, S. M., NIKIFOROV, D. S., and SHADRIN, Yu. A.

"Equipment for Investigating the Thermophysical Characteristics of Materials by Quasi-Stationary Methods"

Novosibirsk, <u>Izvestiya Sibrskogo Otdeleniya Akademii Nauk SSR-</u>Seriya Tekhnicheskikh Nauk, No 3, 1972, pp 39-43

Abstract: Two types of devices are described for investigating the thermophysical characteristics of heat-insulating materials by the complex quasi-stationary method in a broad temperature range and with the dependence of the characteristics on the temperature taken into account. In addition, a system has been developed for automatically controlling the temperature in these devices by realizing the condition for the quasi-stationary mode in the 77-2000° K range. The devices are of the plane and cylindrical types, the cross sectional diagrams of each being given. Also shown is the block diagram of the equipment for programmed automatic control, type are used. The authors are connected with the Institute of Theoretical and Applied Mechanics, in Movosibirsk.

- 31 -

UDC 576.895.421576.852.2.1

BLAGODARNYY, YA. A., Professor, MAKAREVICH, N. M., Candidate of Medical Sciences, and BLEKHMAN, I. M., Kazakh Scientific Research Institute of Tuberculosis, and Central Institute of Tuberculosis, Ministry of Health USSR

"Isolation of Atypical Mycobacteria From Spontaneously Infected Argas persicus Mites"

Moscow, Problemy Tuberkuleza, No 6, 1971, pp 74-75

Abstract: Twenty-four Mycobacterium strains were isolated from argasid mites taken from chickens on Southern Kazakhstan poultry farms infected with tuber-culosis. Sixteen of the strains were identified as typical Mycobacterium avium, while the other eight were regarded as atypical. The morphology of the cultures was variable, the microorganisms ranged from short acid-resistant coccoid forms to granular mycobacteria. All the cultures were resistant to streptomycin, isoniazid, and tibon. Only one of the atypical strains was pathogenic for guinea pigs. None of the eight strains produced any symptoms of the disease in rabbits or mice. Intratesticular inoculation of guinea pigs previously sensitized with horse serum resulted in infection.

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1/2 011 UNCLASSIFIED TITLE-INFLUENCE OF THE TITRANT SOLVENT DURING ACID BASE TITRATION OF PROCESSING DATE-- ZONUV/O NONAQUECUS SCLUTIONS -U-

AUTHOR-(03)-BYKGVA, L.N., ARDASHNIKOVA, V.D., BLAGODATSKAYA, Z.G. The state of the s

CCUNTRY OF INFO--USSR

SCURCE-ZF. PKIKL. KHIM. (LENINGRAD) 1970, 43(5), 1155-7

DATE PUBLISHED----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS-TITRATION, SOLVENT ACTION, METHANOL, PROPANOL, BENZENE

CONTROL MARKING-NO RESTRICTIONS

DECUMENT CLASS--UNCLASSIFIED PRCXY REEL/FRAME--3004/1953

STEP NO--UR/C080/70/043/005/1155/1157

CIRC ACCESSION NO--APO132214

UNCLASSIFIED

的基本的表现的以外的企业的企业的企业的企业,但是是一个企业的企业,但是是一个企业的企业,但是是一个企业的企业,但是是一个企业的企业,但是是一个企业的企业,但是是 第一个企业的企业,但是是一个企业的企业,但是是一个企业的企业,但是是一个企业的企业,但是是一个企业的企业,但是是一个企业的企业,但是是一个企业的企业,但是是一个

CIRC ACCESSION NO--AP0132214 PROCESSING DATE--20NOV70 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MAX. DECREASE IN THE BASIC LIMIT OF THE ACICITY SCALE OF THE SOLVENT WAS OBSERVED ON ADDING MECH, WHICH HAS MCRE PROMINENT ACID PROPERTIES COMPARED TO ISO-PROH AND TERT-BUCH. C SUBG H SUBG ADDN. DOES NOT DECREASE THE BASIC LIMIT OF THE ACIDITY SCALE OF THE SULVENT UP TO GOPERCENT (VOL.-VOL.). FOR TITRATING QUARTERNARY AMMENIUM SALTS THE USE OF MIXED SOLVENT CONTG. C SUB6 H SUB6 AND AN ALC. WITH LESS ACIDIC PROPERTIES WAS SUGGESTED.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

UDC 517.966:517.934

BLAGODATSKIKH, V. I.

"A Sufficient Optimality Condition"

Minsk, Differentsial'nyye Uravneniya, No 3, 1973, pp 416-422

Abstract: This paper considers the problem of the rapidity of action, with respect to the coordinate origin, of a differential inclusion, defined as $\mathbf{x} \in F(\mathbf{x})$, where $F: E^n \to \Omega(E^n)$ is some specified mapping and $\mathbf{x}(\mathbf{t})$ is the solution of the inclusion. The sufficient condition of optimality is obtained in the form of a support principle in the fulfillment of the requirements for local controllability of the inclusion and the concavity of the support function. The sufficient condition for optimality is obtained in the case in which the controlled object is described by a system of linear differential equations. The author refers to an earlier found the sufficient condition for the convexity of the sphere of attainfound the sufficient condition for the convexity of the sphere of attainpoints $\mathbf{x} \in E^n$ from which transition can be made to the origin of coordinates within a particular time interval.

- 7 -

UDC 58.004.12:632.4

SANIN, S. S., SADKOVSKIY, V. T., and BLAGODEROV, N. V., North Caucasian Scientific Research Institute of Plant Pathology, Krasnodar

"A Device for Trapping Fungus Spores in the Air"

Leningrad, Mikologiya i Fitopatologiya, No 5, 1971, pp 464-466

Abstract: The device designed by the authors consists of a rod with a vane attached at one end and two sidepieces 70 mm apart at the other end. Several slides coated with vaseline are inserted into grooves on the sidepieces. Above the latter is a shield to protect the surface of the slides from rain and direct sunlight. The rod, sidepieces, and vane rotate on a pivot set in a vertical stand. The device can be used not only to establish whether spores are present in the air, but also to determine the average daily concentration of spores, is calculated from the equation

 $C = 0.046 \frac{N}{v}$

where C is the average daily concentration of spores in the air, N is the total number of spores on 4 slides, and v is the average daily wind velocity (m/sec). Tests of the device showed its trapping capacity to be 3.4 to 4 times greater than that of the ordinary vane-type apparatus and 7 to 12 times more sensitive on rainy days.

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Soviet Inventions Illustrated, Section I Chemical, Derwent, 3-70

237633 REMOVAL OF SCALE or dense oxide layers from a plurality of relatively small articles made of ferrous metals or copper alloys, is carried out by immersing the articles in an aqueous medium containing 2.5-5% of HCl, 1.5% of an emulsifier (OF-7 or OP-10), and 10-20% of polishing grains (e.g. white electrocorondum), at room temperature, and applying mechanical vibrations for 15-40 mins. The weight ratio articles: liquid is 1:2. The scale is effectively and rapidly removed. 6.6.67. as 1161895/25-8. E.S.BLAGODETELEVA et alia. (16.6.69.) Bul.8/12.2.69. Class 67a. Int.Cl. B24d.

J)

AUTHORS:

Blagodeteleva, Ye. S.; Shermazanov, G.-I. K.; Kozlov,

A. Ye.; Antonyuk, Yu. K.; Solodkin, L. A. and

Tikhonov, V. Yu.

19741244

USSR

UDC 615.281:8:547.775

SARATIKOV, A. S., YAVOROVSKAYA, V. YE., PRISHCHEP, T. P., BLAGERMAN, S. K., KISELEVA, V. N., IL'INSKIY, N. N., and GICHEVA, T. A., Chair of Pharmacology, Tomsk Medical Institute, Tomsk, and Chair of Microbiology, Novosibirsk Medical Institute, Novosibirsk

"The Antivirus Effect of Some Pyrazolone Derivatives in a Cell Culture in Vitro"

Moscow, Farmakologiya i Toksikologiya, Vol 36, No 1, Jan/Feb 73, pp 67-73

Abstract: In experiments carried out with human fibroblast cell cultures, butadion, stearic acid antipyrylamide, and p-aminobenzoic acid N-methyl-N-antipyrylamide had an antivirus effect on the Coxsackie Al3 virus with which the cell culture was infected. This effect was due to the formation by the culture cells of an inhibitor which was not identical with interferon, because it was inactivated at pH 2.2. The pyrazolone derivatives studied stimulated the functional activity of the culture cells and did not damage their nuclear structures. These derivatives had no bactericidal effect on hemolytic streptococci. However, the culture liquid containing the inhibitor had a bacteriostatic effect on these streptococci. Hemolytic streptococci are often present together with Coxsackie virus A 13 in patients with rheumatic fever, particularly in the acute stage of this disease.

CIA-RDP86-00513R002200410011-0 "APPROVED FOR RELEASE: 09/01/2001

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UNCLASSIFIED

PROCESSING DATE--13NOV70

SPACE EXPLORATION -U-

TITLE--AT THE FOREFRONT OF SCIENCE AND TECHNOLOGY, REVIEW OF PROGRESS IN

AUTHOR--BLAGONRAVOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, KRYL'YA RODINY, NO 4, APRIL 1970, PP 23-24

DATE PUBLISHED ---- 70

SUBJECT AREAS-SPACE TECHNOLOGY, BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--SPACE PROGRAM, SPACE STATION, MANNED ORBITAL LABORATORY, UNMANNED GRBITAL LABORATORY/(U) SUYUZ 4 MANNED SPACECRAFT, (U) SUYUZ 5 MANNED SPACECRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3004/1516

STEP NO--UR/0085/70/000/004/0023/0024

CIRC ACCESSION NO--APO131872

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

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2/3 051 UNCLASSIFIED CIRC ACCESSION NO-APG131872

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0-ABSTRACT. IN THE SOVIET SPACE PROGRAM AN IMPORTANT ROLE IS ASSIGNED TO AUTOMATIC VEHICLES IN STUDY OF THE UNIVERSE, MOON, PLANETS AND PRACTICAL USE OF SPACE. AUTOMATIC VEHICLES ARE CONSTANTLY BEING IMPROVED AND THEIR CAPABILITIES ARE INCREASING WITH EACH PASSING YEAR. SOLUTION OF CERTAIN PROBLEMS REQUIRES THAT VEHICLES BE MANNED. EVEN THE MOST PERFECT AUTOMATIC VEHICLES CANNOT REPLACE MAN'S CREATIVE THOUGHT. SOVIET SCIENTISTS ARE WORKING ON THE CREATION OF ORBITAL STATIONS WITH EXCHANGEABLE CREWS AS THE MOST PRACTICAL APPROACH TO MAN'S PENETRATION INTO SPACE. THEY CAN BECOME "COSMODROMES IN SPACE," LAUNCHING PLATFORMS FOR FLIGHTS TO OTHER PLANETS. SERVE AS THE BASIS FOR SCIENTIFIC LABORATORIES FOR SPACE BIOMEDICINE, GEOPHYSICS, ASTRONOMY AND ASTROPHYSICS. EVERY NEW SUVIET MANNED FLIGHT HAS SULVED SPECIAL PROBLEMS ASSUCIATED WITH THE CREATION OF FUTURE ORBITAL STATIONS. THE FIRST SOVIET EXPERIMENTAL SPACE STATION WAS CREATED IN JANAURY 1969. IT WAS ASSEMBLED FROM THE "SGYUZ-4" AND "SOYUZ-5" SHIPS. IN THE FUTURE ORBITAL STATIONS WILL CARRY LARGE TELESCOPES: THERE WILL BE NO DEFORMATION OF LENSES CAUSED BY THEIR OWN WEIGHT AND NO DISTORTIONS CAUSED BY THE EARTH'S ATMOSPHERE. POSSIBLE TO STUDY STARS IN THE X RAY, GAMMA RAY AND THERMAL RANGES AND IT WILL BE PICK UP VAST AMOUNTS OF INFORMATION WHICH EARLIER COULD NOT PENETRATE THROUGH THE EARTH'S ATMOSPHEKE. INSTRUMENTS ON ORBITAL STATIONS WILL BE ABLE TO SURVEY THE EARTH'S NATURAL RESOURCES, THE WEALTH OF ITS SEAS AND OCEANS, MINERAL AND FOREST RESERVES.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

3/3 051 UNCLASSIFIED PROCESSING DATE--13NOV70 CIRC ACCESSION NO--APOI31872
ABSTRACT/EXTRACT--THE TIME IS FAST APPROACHING WHEN MAN WILL BE ABLE TO MAKE FLIGHTS TO THE NEAREST PLANETS, CELESTIAL ? TES, COMETS AND ASTEROIDS.

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1/2 012 UNCLASSIFIED PROCESSING DATE--090CT70
TITLE--AUTOMATION OF CHARGE FEEDING FOR CUPOLA MELTING -U-

AUTHUR-(04)-TRESHCHALIN, V.V., SUKHARCHUK, YU.S., BLAGUNRAVOV, B.P.,
NIKITIU, P.A.

COUNTRY UF INFO-USSR

SOURCE--LITEINGE PROIZVOD. 1970, 2, 8-10

DATE PUBLISHED----70

SUBJECT AREAS-MATERIALS, MECH., IND., CIVIL AND MARINE ENGR TOPIC TAGS-CAST IRON, TECHNICAL STANDARD, METAL MELTING, AUTOMATION

CENTRUL MARKING-NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PRUXY REEL/FRAME--1995/1379

STEP NO-UR/0128/70/002/000/0005/0010

CIRC ACCESSION NO--APOII6828

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--090CT70 CIRC ACCESSION NO--APOIL6828

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE VARIATIONS IN THE CHEM. COMPN. OF THE CHARGE COMPONENTS (AS ALLOWED BY GOVERNMENT STOS.) HAS A MUCH LARGER EFFECT ON VARIATIONS IN THE CHEM. COMPN. OF THE CAST IRON MELTED, THAN THE VARIATIONS IN WEIGHING OF THE COMPONENTS WITH ERRORS SMALLER THAN OR EQUAL TO 10-15PERCENT. THE AUTOMATED WEIGHING OF CHARGES TO THE CUPOLA SHOULD NOT BE TOO ELABORATE AND A SIMPLE ARRANGEMENT WITH THE ACCURACY OF 10-15PERCENT IS QUITE SATISFACTORY, PROVIDED A LARGE INTERMEDIARY STURAGE IS PROVIDED IN WHICH THE VARIATIONS IN CHEM. COMPN. ARE EQUALIZED.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--KINETICS OF THE DISSOCIATION OF BLOCKED ISOCYANATES -U-

AUTHOR-(03)-TARTAKOVSKAYA, A.M., BLAGONRAVOVA, A.A., STREPIKHEYEV, YU.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOLMOL. SOEDIN., SER. B 1970, 12(1), 84-8

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DISSOCIATION, ORGANIC ISOCYANATE, BENZENE DERIVATIVE, SPECTROPHOTOMETER, THERMAL DECOMPOSITION, CARBAMATE/(U) IKS14 SPECTROMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1987/1198

STEP NO--UR/0460/70/012/001/0084/0083

CIRC ACCESSION NO--APO104564

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70 CIRC ACCESSION NO--APO104564 STRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISSOCN. KINETICS OF BLOCKED ISOCYANATES (I) E.G., PHNHCO SUB2 PH, 4-METHYLPHENYL N-PHENYLCARBAMATE, ABSTRACT/EXTRACT--(U) GP-O-2-METHYLPHENYL N-PHENYLCARBAMATE, 4-CHLOROPHENYL N-PHENYLCARBAMATE, 2-CHLOROPHENYL N-PHENYLCARBAMATE, 2-BROMOPHENYL N-PHENYLCARBAMATE, 4-NITROPHENYL N-PHENYLCARBAMATE, AND 2-NITROPHENYL N-PHENYLCARBAMATE WAS STUDIED WITH AN IKS-14 SPECTROPHOTOMETER IN MINERAL OIL AT 85-180DEGREES. THE POSITION OF THE SUBSTITUENT AND ITS NATURE AFFECTED THE DISSOCN. RATE. ELECTRON WITHDRAWING SUBSTITUENTS INCREASED THE RATE: THE EFFECT OF PARA SUBSTITUENTS OBEYED THE HAMMETT ENUATION (SIMILAR TO P EQUALS PLUS 2.00). ADDN. OF 3.38 TIMES 10 PRIME NEGATIVES MOLE-L. BU SUB2 SN(O SUB2 CC SUB11 H SUB23) SUB2 (II) TO THE I SOLN. LOWERED THE DECOMPN. TEMP., ESP. AT THE HIGHER TEMP. RANGE. THE CATALYZED DISSOCN. RATE MARKEDLY INCREASED IN THE PRESENCE OF THE ORTHO ELECTRUM WITHDRAWING SUBSTITUENTS IN THE RING OF THE BLOCKING PHENOL.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

USSR UDC 632.954

BLACONRAVOVA, L. N., and KHOLCHENKOV, V. A., Nikita Botanical Garden

"Effect of Insecticides on the Damage of Apple Leaves by the Borer Moth, on Their Chlorophyl Content, and on the Quality of the Fruits Ripened for Harvesting"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 10 (120), 1973, pp 37-39

Abstract: Metaphos and metathione appeared to be the most effective agents against the moth, among those investigated; their usage had a positive effect on the apple leaves and fruits. During the entire experiment the treated leaves had more chlorophyl than the controls, so that their photosynthesis and sugar forming processes were intensified. When diphterex was used, the results were poorer, and DDT appeared completely ineffective. The chlorophyl content in the leaves of Champagne Renet was the same as in the controls.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

USSR

BALOSHIN, O. N., et al., Yadernaya Fizika, Vol 18, No 3, Sep 73, pp 542-544 with one camera. The reaction was studied on the negative particle beam of the IFVE accelerator. The K-mesons were distinguished by a differential Cerenkov counter. The beam was focused on a liquid hydrogen target 40 cm long which was set approximately three meters from the first chamber of the spectrometer. Approximately 5'107K -mesons were passed through the equipment and 1020 photographs taken. Pairs of uniformly charged tracks were measured on the photographs. The measurement results were then processed on the Razdan-3 computer. Only 270 intersecting tracks were found. A graph is given for the differential cross section of the reaction. The results show that the cross section value of 7.4+1.2 microbarns obtained by the authors in comparison to data obtained for lower energies elsewhere shows the logarithmic dependence of the charge exchange cross section on the pulse, equal to -1.58+0.05. The authors thank K. G. Boreskov, A. M. Lapidus, S. T. Sukhorukov, and K. A. Ter-Martirosyan for their presentation of the computational results as the dependence of the differential cross section onpulse transfer (do/dt). This dependence is compared with predictions of the Regge pole model.

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USSR

UDC: 533.6.011

BLAGOSKLONNOV, V. I., MINAYLOS, A. N.

"Supersonic Flow of a Perfect Gas Around a Circular Cylinder"

Uch. zap. Tsentr. aerogidrodinam. in-ta (Scientific Notes of Central Aerohydrodynamics Institute), 1972, 3, No 2, pp 130-134 (from RZh-Mekhanika, No 9, Sep 72, Abstract No 98460)

Translation: The paper presents the results of numerical calculations of flow around a cylinder in the Mach number range of $M_{\infty}=1.5\text{--}1000$, at specific heat ratios of the gas from 1.05 to 1.66. Empirical dimensionless numbers are given for a number of flow characteristics which enable presentation of the results in the form of analytical relations. Bibliography of 12 titles. Resumé.

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UDC 629.78.015:533.6.011.5

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BLAGOSKLONOV, V. I. and MINAYLOS, A. N.

"Supersonic Flow of an Ideal Gas Around a Round Cylinder"

Uch. Zap. Tsentr. Aerogidrodinam. In-ta (Scientific Writings of the Central Aerohydrodynamics Institute), Vol 3, No 2, 1972, pp 130-134 (from Referativnyy Zhurnal--Raketostroyeniye, No 8, 1972, Abstract No 8.41.88)

Abstract: Results of numeric calculations of flow around a cylinder in the range of Mach numbers from 1.5 to 1000 and the specific gas heat capacity ratios from 1.05 to 1.66 were presented. For a number of flow characteristics, empirical criteria of comparison were given making it possible to present results in the form of analytical functions. Author's view, 5 figures, 12 bibliographical references.

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USSR

UDC 662.997.621.316.344.4

TOROPTSEVA, T. N., BAYBAKOVA, N. N., GREBELYUK, I. I., BLAGOVESHCHENSKAYA, I. F., All-Union Order of the Red Banner Scientific Research Institute of Current Sources

"An Investigation of the Behavior of Silicone Polymer Materials Under the Operating Conditions of Solar Power Installations"

Tashkent, Geliotekhnika, No 6, 1970, pp 38-39

Abstract: A report is given on an analysis and operational testing of three new types of bonding material - silmethylene, polysiloxysilazane, and silazane, with regard to their use in solar power installations. It is found that I-24-7 polysiloxisilazane varnish and I-24-7 silazane varnish have favorable long-time aging properties against light and weather, stability to abrupt temperature changes, which, in conjunction with good properties of adhesion to concentrators and semiconductors, mechanical strength and resistance to solvents, qualify them for use as protective coatings for the workings surfaces of photocells and concentrators.

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UDC 616.28-008.1-02:615.33

BLAGOVESHCHENSKAYA, N. S., Professor, Institute of Neurosurgery imeni Academician N. N. Burdenko, Academy of Medical Sciences USSR

"Auditory and Vestibular Disorders Occurring After the Use of Ototoxic Antibiotics"

Moscow, Vestnik Otorinolaringologii, No 1, Jan/Feb 72, pp 3-8

Abstract: Many of the currently used antibiotics selectively affect the peripheral and central portions of the auditory nerve by gradually accumulating and remaining for long periods in the inner-ear lymph. The vestibular nerve is readily injured by streptomycins (including neomycin, canamycin, viomycin, and gentamycin). The resulting disorders, such as vertigo, imbalance, vomiting, and nystagmus, are often reversible. The cochlear nerve is especially severely damaged by neomycins (including monomycin, canamycin, streptomycin, dehydrostreptomycin, viomycin, restomycin, and vancomycin). The first sign of toxicity is persistent noise in the ears. Subsequently, hearing acuity is reduced and eventually complete bilateral, usually permanent deafness develops. Ototoxic antibiotics are contraindicated in pregnancy and in persons with renal insufficiency or neuritis of the auditory nerve; they should be given with caution to children and old persons. Whenever feasible, nontoxic antibiotics such as penicillin, erythromycin, and semisynthetic penicillins (meticillin, oxacillin, and ampicillin) should be administered. 1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

USSR

UDC 617-001.28-06:616.8

GLAZUNOV, I. S., HLAGOVESHCHENSKAYA, V. V., IVANOV, V. A., and MALAKHOVA, V. V.,

"Clinical Characteristics and Some Problems of the Pathogenesis of Neurological Disturbances in Severe Ferms of Acute Radiation Sickness"

Moscow, Zhurnal Nevropatologii i Psikhiatrii imeni S.S. Korsakov, Vol 73, Vyp 2, 1973, pp 165-168

Abstract: Nervous system pathology of eight patients receiving 400-900 rem gamma or neutron radiation is described. In the first stage acuteness could be diagnosed on the basis of the intensity of the initial reaction and the time of its appearance. Meningeal and general brain symptoms were most frequently characteristic of the intensity. Judging by them all patients had either mild or more pronounced radiation sickness. In the second stage these symptoms became less pronounced but persisted. In the critical third stage these symptoms intensified again, and various degrees of cerebral edema developed (the degree and the rapidity of onset depending on radiation dose). The whole range of neurological disruptions in the severe form of radiation sickness is described as a parenchymatic-meningeal syndrone of varying severity. Recovery was extremely slow, especially from vegetative-vascular instability accompanied by vestibular-vegetative reactions and asthenia. Rheoencephalographic studies supported the idea that such disruptions of the central nervous 1/2

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GLAZUNOV, I. S., et al., Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakov, Vol 73, Vyp 2, 1973, pp 165-168

system are a product of vascular disturbances and changes in vessel wall permeability. Venous outflow from the brain cavity was found to be encumbered very early, prior to appearance of edematic symptoms. Such studies also revealed considerable damage to the brain ventricular system. Thus in severe and extremely severe forms of radiation sickness the damage to various nervous system structures is considerable and can be direct or indirect.

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- 72 -

USSR

WC 531/534:001.8

BLAGOVESHCHENSKIY, A. S.

"Concerning Some New Correct Problems for a Wave Equation"

Leningrad, Tr. V Vses. Simpoz. po Diffraktsii i Raspostr. Voln (Works of the Fifth Symposium on Wave Diffraction and Propagation), Nauka, 1971, pp 29-35 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2A16 by A. A. Zaytsev)

Translation: The article is a unification of the solutions of two independent problems. In the first part of the work is obtained the asymptotic form of solution of the Cauchy problem for a wave equation with a right-hand part during the notion of a point at infinity at the velocity of sound in an arbitrary direction. The basic result is the omega-limit of the theorem which is proven by means of the definition p_i introduced by the author. At all values of p_i , $\mathcal{W} \subset \mathbb{R}$ x S² there exist the limits $\lim_{t \to \infty} \rho_i e^{4\pi i t t}(x, t) = F_{\pm}(p, \omega)$

Further in the formulation of the theorem, there is indicated the method of computing the functions F + (p, omega) by means of the Radon transformation. The necessary and sufficient conditions are presented, which must be imposed upon the function F + (p, omega) in order that it be the p, omega 1/2

· USSR

BLAGOVESHCHENSKIY, A. S., Problemy Matematicheskoy Fiziki, No 5, 1971, pp 38-62

theorem of invariant subspaces, which the author formulates in a theorem that he proceeds to prove. He then solves one multidimensional inverse problem and generalizes the results. The article contains 10 bibliographic entries.

2/2

- 17 -

Measuring, Testing, Calibrating

USSR

UDC: 681.2.083.3.531.768

SUBBOTIN, V. M., KUZNETSOV, Yu. I., BLAGOVESHCHENSKIY, M. N., Perm' Polytechnical Institute

"A Compensation Accelerometer"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 21, Jul 72, Author's Certificate No 344357, Division G, filed 16 Oct 70, published 7 Jul 72, p 182

Translation: This Author's Certificate introduces a compensation accelerometer which contains a housing, a liquid-filled chamber, an inertial body with force pickup winding and two cylindrical depressions on the ends, a force pickup magnetic circuit located in the depressions of the inertial body, a displacement pickup and an amplifier. As a distinguishing feature of the patent, the device is designed for obtaining the signal of the derivative of the measured acceleration. The accelerometer is equipped with a float and a pickup for displacement of the float relative to the inertial body. An axial channel is made in the inertial body, and the float is connected by an elastic element to the inertial body and is accommodated in the axial channel.

1/1

UDC 533.652/.661.013

BLAGOVESHCHFNSKIY, N. A., KOSTYUK, K. K., EL'GUDINA, B. A.

"Experimental Investigation of the Effect of the Reynolds Number on the Aerodynamic Characteristics of a Wing-Fuselage Combination at Mach Eight"

Uch. zap. Tsentr. aero-gidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamics Institute), 1970, 1, No 6, pp 58-66 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10B240)

Translation: This paper presents the results of an experimental study of schematized models of a maneuverable hypersonic aircraft at Mach eight. Rough calculations of the quantity $K_{\rm max}$ for a change in the Reynolds number over the range of $2\cdot10^5-2\cdot10^6$ are compared with the experimental results. Possible methods of reducing the losses of $K_{\rm max}$ in pitch balancing are considered. Authors' abstract.

1/1

- 21 -

USSR

UDC 576.851.555.098.345.4

IVANOVA, L. G., BLAGOVESHCHERSKIY, V. A., and BULATOVA, T. I., Institute of Epidemiology and Microbiology imeni Gamaleya, USSR Academy of Medical Sciences, Moscow

"Carbohydrate Composition of Type A Cl. Botulinum Felonging to Different Serological Groups"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1973, pp 98-103

Abstract: Ion exchange column chromatography and paper chromatography were employed to invertigate the carbohydrate composition of two sero-logic strains (98 and Memphis) of Cl. botulinum type A. Culture media did not have an effect on their carbohydrate composition and both strains contained glucose, glucosamine, ribose. However, strain Memphis differed from strain 98 in that it contained muramic acid, and a higher concentration-of glucose and an unidentified neutral sugar than did strain 98.

1/1

_ 43 -

USSR

UDC 615.272:576.851.553].012.8

BLAGOVESHCHENSKIY, V. A., RESHETNIKOVA, L. N., BULATOVA, T. I., and PEROVA, Ye. V., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR, Moscow

"Purification and Concentration of Cl. botulinum F Toxoid"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1972, pp 22-25

Abstract: Highly immunogenic toxoids can be obtained by a 2-stage method of purification and concentration. Primary purification is achieved by precipitating grade toxoid with 1 N hydrochloric acid in the isoelectric zone after adding 15% NaCl. Secondary purification involves repeated precipitation of the toxoid with 1 N hydrochloric acid in the isoelectric zone after adding MaCl (for toxoids prepared on casein media) or by precipitating it in the cold with 1 1/2 parts chilled acetone (for toxoids prepared on fish media). White mice immunized once with the purified and concentrated toxoids (5 toxoid binding units) survived the injection of 5000 MLD of type F toxin.

1/1

- 26 -

USSR

UDC 576.851.555.098.31.577.156

TEL'BUKH, V. P., BLAGOVESHCHENSKIY, V. A., ISPOLATOVSKAYA, M.V., and BORISHPOLETS, Z. I., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Kedical Sciences USSR

"Some Characteristics of Proteolytic Systems of Cl. perfringens Type A"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 12, 1971, pp 93-97

Abstract: The relationship between the proteolytic and lecithinase activities of C. perfringens type A cells was studied during the first hours of growth on a casein-mushroom medium containing B complex vitamins. The level of proteolytic and lecithinase activities was high in the initial growth stages (2-hour culture), but after 6 hours no lecithinase activity could be detected. In another series of experiments, lecithinase was destroyed by the proteolytic enzymes present in resting cells of a 2-hour culture at both acid and weakly alkaline pH values. Lecithinase activity decreased even when incubated in an acid medium with endoproteinase isolated from cells of 2- and 6-hour cultures. The high proteolytic activity at both acid and alkaline pH suggests the existence of two endoproteinases or one proteinase with a wide spectrum of action. Proteinase was resistant to trypsin as an inhibitor. Proteinase treated with urea did not lose its activity when heated (to 80°C for 15 min), whereas untreated proteinase became half as active after heating.

USSR

UDC 615.372.576.851.553/.012

SEYRANYAN, I. B., and BLAGOVESHCHENSKIY, V. A., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Kedical Sciences USSR, Koscow

"Preparation of a Purified and Concentrated Botulinus Toxoid Type E"

Moscow, Zhurnal Kikrobiologii, Epidemiologii i Immunobiologii, No 4, Apt 71,

Abstract: The purpose of the work conducted was preparation of a highly purified and concentrated botulinus toxoid type B by a simple and cheap method that would be suitable for the mass production of the septatoxoid developed in 1968 at the Institute ineni Ganaleya. Toxoids were prepared by detoxifying with formalin and heat (37°C toxic filtrates from cultures of Cl. botulinum, Type B, strain No 175. The cultures had been grown on casein nutrient media of different composition (a casein-fungus medium or casein acid hydrolysate to which 2% vitamin B complex or yeast water and 5% corn extract had been added). The activity of the initial (natural) toxoids varied in the 7-20 SU/ml range. Their content of total and protein N also varied considerably. The first purification stage consisted of precipitation with 1 N HCl in the isoelectric range in the presence of 15% NaCl. The pH at the isoelectric point varied in the 2.9-3.5 range for different series. The precipitate was

SEYRANYAN, I. B., and BLAGOVESHCHENSKIY, V. A., Zhurnal Eikrobiologii, Epidemiologii i Immunobiologii, No 4, Apr 71, p 142

separated by centrifuging and dissolved in physiological saline, concentrating the toxoid by a factor of 10; then the pH was brought to 7-8 with NaCH. The yield of active substance in the concentrate was 65-92.8%; the purification was 98-99.3 and 86-98.8% with reference to total and protein N, respectively; and the increase in specific activity was by a factor of 12-67. Thus, the principal amount of extraneous nitrogen was removed in the first purification stage. To purify the concentrates further, the simplest method that gave the best yield was precipitation with acetone at a low temperature. The primary concentrate cooled to minus 20°C was precipitated with an equal volume of acetone brought to the same temperature. The precipitate was dissolved in physiclogical saline, concentrating it in the process by a factor of 3-4. As a result purification with respect to the natural toxoid reached 99.3-99.6% and 98.9-99.7% in regard to total and protein N, respectively. The specific activity increased by a factor of 1.3-2.6 vs. that of the primary concentrate and by a factor of 21-85 vs. that of the natural toxoid, amounting on the average to 414.9 SU/mg protein N. The mean yield of antigen reached 81.8%.

2/2

- 13 --

UDC 621.397(204)

BLAGOVESHCHENSKIY, V. P., GANICH, P. Ya., PREDKO, K. G., SHIMYANSKIY, S. L.

"Using a Television System to Evaluate the Contrast Characteristics of Underwater Objects"

Izv. AN BSSR. Ser. fiz.-mat. n. (News of the Academy of Sciences of the BSSR. Physics and Mathematics Series), 1971, No 3, pp 118-121 (from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11G258)

Translation: A series-produced television installation is used to measure the frequency-contrast characteristics of layers of water of various thickness. It is shown that the resolution of underwater viewing systems is determined by the scattering properties of the water. The principles of modeling and dimensionless scaling parameters are used to analyze the visibility of objects in a scattering medium. Two illustrations, bibliography of eight titles.

1/1

- 76 -

USSR

UDC: 547.26'118.07

NIFANT'YEV, E. Ye., BLAGOVESHCHENSKIY, V. S., SOKURENKO, A. H., and SKLYARSKIY, L. S.

"Method for Obtaining Functional-Replacing Dialkyl Phosphates"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No. 33, 1971, p 77

Abstract: In this method, hypophosphorous acid is combined with alcohol, carbon tetrachloride, and a base of the type of triethylamine, under heating at from 100-125° C. The process is done in a medium of an inert organic solvent like dioxane. Patent claimed by the M. V. Lomonosov State University.

1/1

- 67 -

USSR

UDC: 621.317.799;621.382

BLAGOVESHCHENSKIY, V. S., ZYRYANCV, G. Kh., and YANYUSHKIN, V. L.

"Measuring Semiconductor Diode Loss Resistance"

Moscow, Pribory i Tekhnika Eksperimenta, No. 3, 1971, pp 145-147

Abstract: The loss resistance, usually designated rs, is one of the semiconductor diode parameters determining the frequency range of the diode. This article describes an instrument for measuring this quantity which overcomes the defect of an earlier device for the same purpose by using a peak detector instead of the low-frequency filter used in the earlier system, thus increasing the signal obtained from the diode under test. A block diagram of the new system plus a schematic are given, together with an explanation of its operation. The instrument can be used for measuring the loss resistance in tunnel diodes and in varactors the Tomsk Polytechnical Institute.

1/1

- 139 -

USSR

UDC: 547.26'118

BLAGOVESHCEENSKII, V. S. and VIASOVA, S. N.

"Preparation of Trialkyltetrathiophosphates from Alcohols and Phosphorus Pentasulfide"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 5, May 1971, pp 1032-1034

Abstract: Trialkyltetrathiophosphates (C1-C10) were synthesized by reaction of primary alcohols with phosphorus pentasulfide: 3ROH + $P_2S_5 \longrightarrow (RS)_3PS$

The reaction takes place in two stages: $4ROH + P_2S_5 \rightarrow 2(RO)_2PSSB + H_2S$

and

 $6(RO)_2PSSH + 2P_2S_5 \longrightarrow 4(RS)_5PS + P_2O_2S_3 + 2P_2O_2 + 3H_2S$

The overall reaction in exothermic, the temperatures increasing with the size of the substituted group. The yields were high, (50-86%) when the reaction was conducted in two stages.

1/1

1/2 019 UNCLASSIFIED PROCESSING DATE--300CT71
DIHYDROTHIOPYRAN -U-

AUTHOR-(04)-BLAGOVESHCHENSKIY, V.S., KAZIMIRCHIK, I.V., IVANOVA, M.I.,

CCUNTRY OF INFO-USSR

SGURCE-ZH. ORG. KHIM. 1970, 6(4), 877-9

DATE PUBLISHED ----- 70

SUBJECT AREAS-CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS—CONDENSATION REACTION, THIGL, HETEROCYCLIC DXYGEN COMPOUND, PHOSPHORUS SULFIDE, ORGANIC SYNTHESIS, ORGANIC SULFUR COMPOUND, ORGANIC PHOSPHORUS COMPOUND, PESTICIDE

CONTROL MARKING--NO RESTRICTIONS

DGCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--2000/2067

STEP NO--UR/0366/70/006/004/0877/0879

CIRC ACCESSION NG--AP0125654

UNCLASSIFIED

019 UNCLASSIFIED CIRC ACCESSION NO-APO125654 PROCESSING DATE-- 300CT7C AGSTRACT/EXTRACT-(U) GP-0-ABSTRACT. CONDENSATION OF DELTA PRIME2 DIHYDRGTHIGPYRAN (1) WITH ALCS. IN ET SUBZ O SOLN. CUNTG. HCL GAVE 210R 3), R, SUBSTITUTED, TETRA, HYDROPYRANS (II) (R IS UME, OBU). TREATING I WITH BUSH GAVE II (R EQUALS SBU). I WITH DIALKYL DITHIGPHOSPHATES GAVE II (R IS SP(:S)(OME) SUB2 OR SP(:S)(OET) SUB2). THE REACTIONS OF I WITH TETRA-ET BISTHIGPHOSPHATE GAVE 2,4,3,R PRIMEL, DI, SUBSTITUTED, TETRAHYDROPYRAN (III) (R AND R PRIMEL ARE SIMILARLY, I REACTED WITH HG(OAC) SUB2 IN MECH TO GIVE III (R EQUALS CME, R PRIMEL EQUALS HOUGE), WHICH WAS CUNVERTED INTO III (R EQUALS OME, R PRIME! EQUALS HGCL). II AND III ARE POTENTIAL FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MUSCOW, USSR.

UNCLASSIFIED

2/2

UNCLASSIFIED PROCESSING DATE--020CT70
TITLE--ANTIFRICTION PROPERTIES AND WEAR RESISTANCE OF A PLASTIC PLASMA
COATING PAIR DURING DRY FRICTION -UAUTHOR-(03)-KUTKOV, A.A., KALNITSKIY, V.S., BLAGOVESTNY, A.S.

COUNTRY OF INFO--USSR

SOURCE--MEKH. POLIM. 1970, 6(1), 177

DATE PUBLISHED----70

SUBJECT AREAS -- MATERIALS

TOPIC TAGS--WEAR RESISTANCE, PLASTIC COATING, MATERIAL TESTING EQUIPMENT, PLASMA TORCH SPRAYING, ALUMINUM DXIDE, POLYAMIDE RESIN, CAPRONE, POLYETHYLENE, POLYTETRAFLUORGETHYLENE, VINYL RESIN, FRICTION TEST/(U)VINIPLAST VINYL RESIN, (U)FTOROPLAST4 FLUORINE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1989/0811

STEP NO--UR/0374/70/006/001/0177/0177

CIRC ACCESSION NO--APO107353

UNCLASSIFIED

2/2 050

CIRC ACCESSION NO-APO107353

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. PLASTICS, E.G., POLYAMIDE P-68, KAPRON, POLYETHYLENE, VINIPLAST, AND FTOROPLAST-4 WERE TESTED IN A FRICTION TESTING APP. AGAINST A PLASMA AL SUBZ O SUBB COATING 60-300 MU THICK. THE ANTIFRICTION PROPERTIES AND WEAR RESISTANCE OF THE PAIRS PLASMA COATINGS WERE ENTIRELY UNAFFECTED DURING THE FRICTION OF PLASTICS.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--230CT70
TITLE--DETERMINATION OF THE QUANTITY OF MECHANICAL IMPURITIES IN ADDITIVES
AND OILS -U-

AUTHOR-(03)-BLAGOVIDOV, I.F., VSELYUBSKIY, S.B., RUTTER, A.A.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (3), 10-12

DATE PUBLISHED----70

SUBJECT AREAS--CHEMISTRY, MATERIALS, PROPULSIUN AND FUELS

TOPIC TAGS--GASOLINE, TECHNICAL STANDARD, TEST METHOD, QUANTITATIVE ANALYSIS, LUBRICATING UIL, LUBRICANT ADDITIVE, FILTRATION/(U)GOST 637059 LUBRICANT STANDARD, (U)GOST 1227566 LUBRICANT STANDARD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1996/1515

STEP NO--UR/0318/70/000/003/0010/0012

CIRC ACCESSION NO--APOI18502

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--230CT70 CIRC ACCESSION NO--APOL18502

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DETN. BY GOST 12275-66 OF MECH. IMPURITIES IN GILS CONTG. AND LACKING ADDITIVES WAS ACCURATE ACCORDING TO ELECTRON MICROGRAPHS OF THE PPTS. AND EVAPO. FILTRATES WHEN THE GIL AND ADDITIVE WERE REMOVED FROM THE RESIDUE ON THE NO. 4 NITROCELLULOSE MEMBRANE FILTER (PORE SIZE 0.9 MU) BY WASHING IT 3 TIMES WITH 30 ML PORTIONS OF KALOSH GASOLINE. DETNS. BY GOST 6370-59 WERE INACCURATE.

UNCLASSIFIED

Petroleum Trocessing Technology

USSR

UDC 665.637.6:621.892.096/.097

BLAGOVIDOV, I. F., SHOR, G. I., TROFIMOVA, G. L., and LAPIN, V. P.

"Some Aspects of the Development of Contemporary Motor Oils"

Moscow, Neftepererabotka i Neftekhimiya, No 10, 1973, pp 29-32

Abstract: Compatibility of alkyl salicylate, sulfonate, succinimide, and dithiophosphate additives was investigated as well as their pickup by oils of various chemical compositions. On the basis of experimental results effective motor oils have been developed for the current high performance engines, containing a selection of contemporary additives with consideration of maximum utilization of their functional properties.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--11DEC70 IITLE--SCUIND VELGCITY IN LIQUEFIED GAS SOLUTIONS. III. ADIABATIC AND ISOTHERMAL CUMPRESSIBILITIES OF THE ARGCN KRYPTON SYSTEM -U-AUTHOR-(C4)-BUTKO, A.YE., MIKHAYLENKO, S.A., BLAGGY, YU.P., SJRUKIN, V.A.

CCUNTRY OF INFG--USSR

SOURCE---UKR. FIZ. ZH. (RUSS ED.) 1970, 15(4), 563-70 (RUSS)

DATE PUBLISHED ---- 70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--ARGON, KRYPTIN, SOUND TRANSMISSION, ULTRASONIC VELOCITY

CONTRUL MARKING--NO RESTRICTIONS

DCCUMENT CLASS—UNCLASSIFIED PROXY REEL/FRAHE--3007/0139

STEP NG--UR/0185/70/015/004/0563/0570

CIRC ACCESSION NU--APO135636

UNCLASSIFIED

CIRC ACCESSION NO-APO135636
ABSTRACT/EXTRACT—(U) GP-O- ABSTRACT, THE COEFF. OF ADIABATIC
COMPRESSIBILITY AND THE SPEED OF SOUND (V) IN THE SYSTEM AR, KR INDICATED
A STRENG DEVIATION OF THIS SYSTEM FROMIDEAL BEHAVIOR. ASSUMING IDEAL
BEHAVIOR, THE DEPENDENCE OF V ON THE COMPN. OF THE LIGS. SHOULD HAVE A
MIN. AT MOLE RATIO OF KR EQUALS 0.6 AT 120-40DEGREESK. CURVES 385ED ON
THE EXPTL. DATA ARE CUAL. DIFFERENT AND SHOW A STEADY INCREASE OF V WITH
INCREASING ANTS. OF KR IN THE MIXTS. FACILITY: FIZ. TEKH. INST.
NIZKIKH TEMP., KHARKOV, USSR.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

455C1-A-5S-H-H-U-

1/2 UNCLASSIFIED PROCESSING DATE--04DEC70 TITLE--SURFACE TENSION OF KRYPTON, METHANE, DEUTEROMETHANE, AND OXYGEN -U-

AUTHGR-(04)-BLAGOY, YU.P., KIREYEV, V.A., LCBKO, M.P., PASHKOV, V.V.

COUNTRY OF INFO--USSR

SOURCE-UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(3), 427-32

DATE PUBLISHED----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SURFACE TENSION, KRYPTON, METHANE, OXYGEN, DEUTERIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3007/0948 STEP NO--UR/0185/70/015/003/0427/0432

CIRC ACCESSION NO--APOL36379

UNCLASSIFIED ...

2/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70 CIRC ACCESSION NO--APO136379
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE DIFFERENTIAL METHOD OF CAPILLARY RISE WAS USED TO DET. THE TEMP. DEPENDENCE OF THE SURFACE TENSION: SIGMA, FOR KR, CH SUB4, CD SUB4 AND O SUB2 OVER THE ENTIRE RANGE OF TEMPS. AT WHICH THEY EXIST IN THE LIQ. FORM. THE RESULTS ARE TABULATED AND SHOWN GRAPHICALLY ALONG WITH THE OTHER EXPTL. DATA. THE RESULTS CAN BE DESCRIBED BY THEVAN DER WAALS EQUATION. THE DEVIATIONS WERE DISCUSSED FROM THE LAW OF CORRESPONDING STATES FOR A LARGE NO. OF SUBSTANCES AND THE REASONS FOR THE DEVIATIONS WERE CONSIDERED. FACILITY: FIZ. TEKH. INST. NIZKIKH TEMP., KHARKOV, USSR.

UNCLASSIFIFD

ACCOUNT OF THE PROPERTY OF THE

1/2 FITLE--HYDROSTATIC EFFECT IN A BINARY SOLUTION NEAR THE CRITICAL SOLUTION PROCESSING DATE--230CT70 AUTHOR-(02)-BLAGOY, YU.P., SOKHAN, V.I.

COUNTRY OF INFO--USSR

SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(6), 291-5

DATE PUBLISHED ---- 70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--METHANE, FLUDRINATED HYDROCARBON, CRITICAL PUINT, HYDROSTATICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1995/1252

STEP NO--UR/0386/70/011/006/0291/0295

CIRC ACCESSION NO--APO115714

UNCLASSIFIED

2/2 020 .UNCLASSIFIED PROCESSING DATE--230CT70 CIRC ACCESSION NO--APOLIS714

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SHADOW METHOD (S. ABRUKOV, 1962) WAS USED TO STUDY THE CONCN. DISTRIBUTION IN THE BINARY SOLN. CH SUB4-CF SUB4 WHICH HAS AN UPPER CRIT. POINT OF MIXING AT T SUBC 94.72DEGREES K AND 43.5PERCENT CF SUB4. THE MAX. CONCN. GRADIENT IS FOUND AT THE LIQ. SURFACE AND IT DECREASES SHARPLY AS THE DISTANCE FROM THE SURFACE IS INCREASED. THE CONCN. DISTRIBUTIONS OBTAINED BELOW T SUBC ARE DUE TO THE EFFECT OF THE GRAVITATIONAL FIELD AND ARE HYDROSTATIC EFFECT (A. V. VORONEL AND M. SH. GITERMAN, 1965). FACILITY: FIZ. TEKH. INST. NIZK. TEMP., KHARKOV, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

USSR UDC: 534.22;541.8

MIKHAYLENKO, S. A., BLAGOY, Yu. P., and BUTKO, A. Ye.

"Speed of Sound in Liquefied Gas Solutions"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, No 2, 1973, pp 184-189

Abstract: This article is the fifth of a series under the general title given above; the title of this installment is "Systems Containing a Component of Molecules (C3H6-CH4, C3H6-Kr) Without Spherical Symmetry." The four earlier installments investigated liquid solutions and obtained expressions for changes in their thermodynamic characteristics, including the speed of sound. In the present paper, the authors investigate methane-propylene and krypton-propylene systems in which the purity of the krypton was 99.92%; of methane, 99.95%; and of the propylene, 99.81%. Results of the measurements for the speed of sound as a function of the temperature for these solutions are given in tabular form, and curves are plotted for the speed of sound as a function of the solution concentration for comparison with similar curves for ideal solutions. The authors regret that in the absence of a satisfactory theory, they cannot explain the phenomena they observed in terms of the liquid's structure and its changes in solution.

USSR

UDC: 632.951:631.563.006.5

BLAKITNAYA, L. P., Candidate of Biological Sciences, BOGDAN-BLAKIT-NAYA, L. R., Stavropol' Agricultural Institute

"Toxicity of Sumithion for Pests of Grain and Grain Products"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 5, 1973, pp 39-

Abstract: Sumithion [0,0-dimethyl-0-(3-methyl-4-nitrophenyl)-thiophosphate], a pesticide made by the Japanese company "Sumitoma" was field-tested in the Stavropol'skiy Kray. It was found that Sumithion in a dose of 0.2 g/m² has excellent insecticidal and acaricidal properties, and is lethal for most insect and mite pests of granaries. When applied to a glass surface, the chemical showed contact action for about 20 days on the most harmful granary insects and mites. Because of its insecticidal and acaricidal properties against a broad spectrum of warehouse pests in the imaginal and pre-imaginal forms, and its low toxicity for warm-blooded animals, Sumithion (and possibly its analogs -- Metathion from Czechoslovakia, Folithion from West Germany, and Methylnitrophos made in the Soviet environs and also equipment used in connection with grain storage.

- 56 -

1/2 TITLE--USE OF A STEP BY STEP DYNAMIC EXPERIMENT FOR DETERMINING THE UNCLASSIFIED PROCESSING DATE--300CT70 OPTIMUM CONDITIONS OF A CATALYTIC PROCESS -U-AUTHOR-(05)-BLANDIN, YU.V., KALININA, E.V., KUDRYAVTSEY, B.M., MAYOROV,

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERARAB. NEFTEKHIM. (MOSCOW) 1970, (2), 32-4

DATE PUBLISHED---- 70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYSIS, HYDROGENATION, FATTY ACID, CHEMICAL REACTOR,

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1997/0567

STEP NO--UR/0318/70/000/002/0032/0034

CIRC ACCESSION NO--APOL19485

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30UCT70 CIRC ACCESSION NO--APOL19485

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE METHOD WAS APPLIED TO DIRECT HYDROGENATION OF FATTY ACIDS TO ALCS. USING FACTORIAL PLANNING BY MEANS OF A PILOT PLANT. THE MAX. PRODUCTIVITY, TAKEN AS OPTIMIZATION CRITERION, WAS OBTAINED AT 240DEGREES AT THE REACTOR BOTTOM INTAKE STOCK SPACE VELOCITY 0.3 ML-HR AND INTAKE STOCK H RATIO 1:700.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

1/2 012 UNCLASSIFIED PROCESSING DATE--0200170
TITLE--USE OF A FACTOR PLANNING METHOD FOR THE STUDY AND OPTIMIZATION OF A
CATALYTIC PROCESS -U-

AUTHOR-(US)-BLANDIN. YU.V., KALININA, E.V., KUDRYAVTSEV, E.M., MUSHENKO.

COUNTRY OF INFO-USSR

SOURCE--KHIM. TEKHNUL. TOPL. MASEL 1970, 15(3), 42-5

DATE FUEL ISPED ---- 70

SUBJECT AREAS--CHEMISTRY, STOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HYDROGENATION, FATTY ACID, ALCOHOL, CHEMICAL PLANT

CONTO IL MAPKING--NO RESTRICTIONS

DGCUMENT CLASS--UNGLASSIFIED PROXY FEEL/FRAME--1992/1487

STEP NO--UR/0055/70/015/003/0042/0045

CIRC ACCESSION NO--APOLIZABL

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

UNCLASSIFIED PROCESSING JATE--023CT70 CIRC ACCESSION NC--APOLIZABI
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD WAS APPLIED TO THE DIRECT HYDROGENATION OF SYNTHETIC FATTY ACIDS TO ALCS., BY USING THE FEED SPACE VELOCITY. BOTTOM REACTOR TEMP., MOLE RATIO OF FEED TO H. 4 % CONTENT OF FATTY ACIDS ABOVE C SUBIG IN THE FRACTION AS VARIABLES. THE OPTIMIZATION CRITERION WAS THE HIGHER PRODUCTIVITY OF THE PLANT, WHICH WAS 0.175 HR PRIME NEGATIVE1, 246DEGREES, AND RATIO 1:50, RESP. THE PRODUCTIVITY WAS THUS INCREASED BY 35PERCENT OVER THAT OBTAINED UNDER CONDITIONS SUGGESTED BY THE ALL UNION SCIENTIFIC RESEARCH INSTITUTE FOR PSTROCHEMISTRY (0.13 HR PRIME NEGATIVE1).

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCE TITLE—MAGNETIC SURFACE LEVELS IN A SUPERCUNDUCTOR -U-

AUTHOR--BLANK, A.YA.

CCUNTRY OF INFO--USSR

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SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 5, PP 1862-70
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SUPERCONDUCTOR, MAGNETIC FIELD, EXCITATION SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3002/0013

STEP NO--UR/0056/70/058/005/1862/1870

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--APO127663

UNICLASSIFIED

UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--APO127663

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. IT IS SHOWN TAHT FINITE MOTION OF SINGLE PARTICLE EXCITATIONS IN A MAGNETIC FIELD NEAR A SUPERCONDUCTOR DISCRETE QUANTUM LEVELS LOCATED BELOW THE ENERGY GAP. THE QUASICLASSICAL PROBLEM OF SURFACE EXCITATIONS IS SOLVED AND THE SPECTRUM OF THE EXCITATIONS IS FOUND. THE RESULTS ARE ILLUSTRATED BY COMPUTER CALCULATIONS.

FACILITY: INSTITUT TEORETICHESKOY FIZIKI IM. L.

UNCLASSIFIED

TITLE--THROMBASTHENIA IN WORKERS HANDLING BENZENE AND ITS HUMOLOGUES -U-

UNCLASSIFIED

PROCESSING DATE--160CT70

AUTHOR-BLANK, N.L.

027

1/2

COUNTRY OF INFO--USSR

SOURCE--GIGIYENA TRUDA I PROFESSIONAL NYYE ZABOLEVANIYA, 1970, NR 5, PP 32-35

DATE PUBLISHED ---- 70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INDUSTRIAL HYGIENE, BENZENE, BLOOD CHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1995/0449

STEP NO--UR/0391/70/000/005/0032/0035

CIRC ACCESSION NO--APOII6115

UNCLASSIFIED

PROCESSING DATE--160CT70 2/2 027 UNCLASSIFIED CIRC ACCESSION NO--APOIL6115 ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. RESEARCH DATA REFLECTING FUNCTIONAL PROPERTIES OF THROMBOCYTES IN 53 WORKERS DEALING OCCUPATIONALLY WITH BENZENE, IN WHOM MILD OR MODERATE MANIFESTATIONS OF BLEEDING WITH NORMAL THROMBOCYTE COUNT WERE EVIDENT, ARE REPORTED. INVESTIGATIONS COVERED AGGLUTINATION, ADHESIVE AND RETRACTILE CAPACITY OF THROMBOCYTES, ALONG WITH THE EFFECT PRODUCED BY FIBRINOLYSIS ON THE INFERENCE IS DRAWN THAT HEMORRHAGIC BLOOD CLOT RETRACTION. MANIFESTATIONS IN WORKERS EXAMINED AE CAUSED BY QUALITATIVE CHANGES OF THE PLAQUES ASSUMING THE FORM OF THROMBASTHENIA, WHICH MAY BE INTERPRETED AS ONE OF THE FIRST LINKS IN THE DEVELOPMENT OF A HEMORRHAGIC SYNDROME PRODUCED BY BENZENE. EXTENSIVE THROMBASTHENIA MAY BE CONSIDERED TO BE ONE OF THE INITIAL SYMPTOMS OF BENZENE POISONNING. FACILITY: OBLASTNOY KLINICHESKIY INSTITUT IM. M. F. VLADIMIRSKOGO.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

USSR

WC 661.143(088.8)

SOROKIN, O. O. M., BLANK, V. A., and LEBEDEVA, G. A.

"A Method for the Production of Fluorinated Photocathodes?

USSR Author's Certificate No 357621, filed 19 Jun 70, published 25 Jan 73 (from RZh-Khimiya, No 19, Oct 73, Abstract No 19L149 P)

Translation: To lower the long wave sensitivity, the metal layer (alkaline or alkaline-earth) or the fluoride of one of these elements deposited on a base together with Pv are fluorinated to the stoichiometric point with fluorine formed by decomposition of an F-containing compound. The vacuum space containing the base with deposited layer of metal or fluoride is evacuated to a pressure of 10-5mm using a nonoil pump. The base is heated to 300 to the pump is sealed off and the container with XeF₂ is heated to about 50°, resulting in the formation of a 2-4 mm pressure of XeF₂ vapors in the system.

Decomposition (pyrolysis) of XeF₂ occurs in the proximity of upper Pv of the base and the atomic fluorine reacts with its layer compensating for its and does not react with the layer.

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USSR

UDC 621.791.08:620.17

BLANTER, M. Ye., and FINEKL'SHTEYN, M. L.

"Kinetics of Dissolution of Oxide Film and Strength of Welded Joints"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No. 2, 1971, pp 53-55

Abstract: The nature of the change in strength of welded joints, rate of dissolution of the oxide film and degree of deformation by creep were studied for various initial states of the surfaces joined. Studies were performed on 23-mm specimens 16 mm in diameter consisting of type E steel (0.04% C; 0.15% Mn; 0.18% Si; 0.026% S; 0.006% P). The surface states were created by oxidation in air for 20 minutes at 100, 200, 300, and 400°C, as well as 1 hour at room temperature. A dependence is demonstrated between the degree of dissolution of the oxide film and strength of the welded joint produced by heating and pressure in the solid state. The rate of dissolution of the oxide film can sometimes be determined by the nature of the change in strength of the welded joint.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

USSR

UDC 539.4.015

BLANTER M. YE., KOVALEVA, L. A., and TISKOVICH, N. L., (Moscow)

"Nature of the Strengthening of Maraging Steel"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 151-153

Abstract: A previous article by the authors reported the anomalous effect of decreased strength with 90% deformation of steel pre-aged at 475°. The article showed that an ultimate strength of 250-270 kg/mm² can be obtained in maraging steel after combined treatment. The present article attempts to study the nature of the high strength of maraging steel. Maraging steel with the composition 18% Ni, 8% Co, 5% Mo, and 1% Ti was treated under the following regime: hardening + aging + deformation (with shrinkages of up to 90%) + aging. Hardening the following conditions: 375° for 1 hour, 475° 30 min. and 475° 3 hours. Re-aging took place at 450° for 3 hours. The results indicate that aging processes take place

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USSR

BLANTER, M. YE., et al., Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 151-153

in maraging steel during deformation at room temperature, and the increase in deformation hardness is due not only to cold hardening, but also to precipitation hardening. A study of data on variations in the electrical resistance and lattice parameter of the solid solution indicates that back dissolution of strengthening zones occurs in steel pre-aged at 475° C, and this results in reduced strength of the steel under 90% deformation.

2/2



Heat Treatment

USSR

UDC 001.18:621.78

BLANTER, M. YE., All-Union Correspondence Institute of Mechanical Engineering

"Advancements in the Theory of Heat Treatment"

Moscow, Metallovedeniye, No 4, Apr 70, pp 56-61

Abstract: The paper presents a historical review of progress in metallurgy beginning with the Soviet revolutionary period. It notes the training of Soviet metallurgists and heat-treatment specialists and their research in theoretical problems such as isothermal transformation of supercooled austenite, C-diagrams, and high-temperature pealitic transformations. The subsequent period is marked with the concept of structural correspondence related to the physical inhomogeneity of alloys and structural imperfections. In this manner, the concept of the essence of transformations and alloys is intimately linked with those of the real structure of alloys. The consecutive 1/3

USSR

BLANTER, M. YE., Metallovedeniye, No 4, Apr 70, pp 56-61

stage of advancement in theory is related to the experimental confirmation of the existence of metals having theoretical The idea of crystal structural defects responsible for low strength characteristics was thus corroborated. Electron microscopy of labeled atoms was additional proof of the defectiveness of the crystalline structure of metals and alloys. Internal friction led to the study of the interaction between impurity atoms and dislocations. The fundamental study of substructural defects resulted in the development of thermomechanical treatment. Wide use has been made of patenting, a heat treatment method of making high-strength metals. The advancement of the theory of heat treatment in the immediate future is likely to be devoted to research in the initial stages of transformations, earlier termed as pre-processes: the interaction of interstitial atoms with dislocations and the effects of the alloying elements on these processes; and the mechanism of nucleation and growth of particles of the new phase relative to the substructure of the solid alloy. It may be necessary to relate the thermodynamic conditions of transformations to the 2/3

- 28 -

USSR

BLANTER, M. YE., Metallovedeniye, No 4, Apr 70, pp 56-61

localized substructure of the alloy. The advancement of knowledge in the area of physical inhomogeneity of metals and alloys will thus become the basis of the new stage for the active development of the phase transformation theory and the treatment technology of metals and alloys.

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1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DEVELOPMENT OF THE HEAT TREATMENT THEORY -U-

AUTHOR--BLANTER, M.YE.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. DBRAB. METAL. 1970, (4), 56-61

DATE PUBLISHED ---- 70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--THERMAL EFFECT, METAL HEAT TREATMENT

CONTROL MARKING--NO RESTRICTIONS

PROXY REEL/FRAME--3005/1414

STEP NU--UR/0129/70/000/004/0056/0061

CIRC ACCESSION NU--AP0133366

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

2/2 019 UNCLASSIFIED PROCESSING DATE--13NDV70
CIRC ACCESSION NO--APO133366
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HISTORY OF HEAT TREATMENT IS
OJTLINED BRIEFLY, AND THE CONTEMPORARY TRENDS IN ITS DEVELOPMENT ARE
PRESENTED. THE DEVELOPMENT OF HEAT TREATMENT THEORY IN THE FUTURE IS
OISCUSSED. FACILITY: VSES. ZAOCH. MASHINOSTR. INST., MOSCOW,
USSR.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

UNCLASSIFIED

USSR

UDC 621.791.052.620.193.669.295

BLASHCHUK, V. YE., Engineer, GUREVICH, S. M., Doctor of Technical Sciences, SHELENKOV, G. M., Engineer, Electric Welding Institute imeni Ye. O. Paton; TKACHENKO, N. N., Candidate of Technical Sciences, VASILENKO, I. I., Candidate of Technical Sciences, LISKEVICH, I. YU., Engineer, ZAFIYOVSKIY, YU. M., Engineer, ISAYEVA, M. M., Engineer, and MELEKHOV, R. K., Engineer, Physicomechanical Institute of the Academy of Sciences UkrSSR

"The Tendency of AT3 Titanium Alloy Welded Joints to Mechanical Corrosion Failure"

Moscow, Svarochnoye Proizvodstvo, No 1(471), Jan 74, pp 39-40

Abstract: A study was made of the tendency of AT3 titanium alloy and its welded joints to breakdown at increased temperature and pressure in a 0.6% solution of $H_2SO_{l_1}$, as applicable to the working conditions of hydrolytic apparatus. Socimens of AT3 alloy were cut from 24-mm-thick hot-rolled sheet. The failure of welded joints took place at stresses exceeding the yield limit of the alloy. The conditional limits of the corrosion-fatigue strength in axial load with symmetric tension and compression of AT3 alloy and its manually welded joints are close. Automatically welded joints show, in comparison with AT3 alloy, 1/2

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

USSR

BIASHCHUK, V. YE., et al., Svarochnoye Proizvodstvo, No 1(471), Jan 74, pp 39-40

some decrease in strength at stresses exceeding the conditional limit of corrosion-fatigue strength. The AT3 alloy and its welded joints show practically the same durability at cyclic torsion. AT3 alloy is recommended for the production of welded experimental hydrolytic apparatus. Four figures, one table, eight bibliographic references.

2/2

WC 621.791.753.9

LANGER, N. A., Candidate of Technical Sciences, ONOPRIYENKO, L. M., Engineer, BLASHCHUK, V. YE., Engineer, GORBAN', V. A., Engineer, Electric Welding Institute imeni Ye. O. Paton of the Academy of Sciences UkrSSR, ISAYEV, M. M., Engineer, All-Union Scientific Research Institute of the Hydrolysis Industry, Leningrad, and SHELENKOV, G. N., Sumsk Hachinery Hanufacture Plant imeni M. V. Frunze

"Corrosion Resistance of Welded Joints of AT3 Alloy in Sulfuric Acid"

Kiev, Avtomaticheskaya Svarka, No 1(250), Jan 74, pp 67-68

Abstract: An experimental study was made of the corresion resistance and the change of mechanical properties of AT3 titanium alloy and its compounds in 0.6-1.2% concentrated sulfuric acid at 180 and 200 $^{\circ}$ C. The results of electrochemical investigation in 0.9% $\rm H_2SO_4$ at 90 $^{\circ}$ C show that automatically

welded specimens behave analogously to the base metal and active zone. Manually welded specimens have an active zone of anodic dissolution; in their passive zone the current density is 2. 10-2mA/cm², which is less than in the base metal (4.10-2mA/cm²). Tests conducted with sample specimens revealed that the base metal corrodes after 44 weldings at a rate of 0.014 mm/year, automatically

USSR

LANGER, N. A., et al., Avtomaticheskaya Svarka, No 1(250), Jan 74, pp 67-68

welded joint corrodes at a rate of 0.016 mm/year, and a manually welded joint corrodes at a rate of 0.013 mm/year. Two figures, one table, two bibliographic references.

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- 50 -

UDC 620.1941196

ZOTOVA, L. M., BLASHCHUK, V. YE., MAKSIMOV, YU. A., and VAVILOVA, V. V., Institute of Metallurgy imeni A. A. Baykov, Academy of Sciences USSR

"Stress Corrosion of Titanium Alloy AK-1 and AK-2 Weld Joints"

Moscow, Zashchita Metallov, Vol 9, No 6, 1973, pp 707-709

Abstract: The tendency of titanium alloys AK-l and AK-2 to suffer stress corrosion cracking was investigated along with the same study into the stress corrosion cracking of weld joints made from these alloys. Alloys AK-l and AK-2 and their weld joints possess good stability in chloride salts. No cracks or surface cracking were observed in visual inspection. Metallographic studies revealed no cracks in the samples for saturated CaCl₂ and MgCl₂, but in saturated NH₄Cl the samples suffered corrosion failures in the heat-affected zone of the welded alloys. Thus, the investigated alloys and weld joints do not undergo surface cracking in 10% HCl, but alloy AK-2 and its weld joints do suffer stress corrosion after 600 hours in the gaseous phase of 99% HNO₃. Consequently, alloying titanium with vanadium significantly inproves its resistance to corrosion cracking. 2 tables, 3 bibliographic references.

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UDC 621.791.011:669.295

GUREVICH, S. M., Doctor of Technical Sciences, and SHELENKOV, G. M. and ELASHCHUK, V. YE., Engineers

"Weldability of Titanium Alloy VT3"

Moscow, Svarochnoye Proizvodstvo, No 11, 1973, pp 20-21

Abstract: The weldability of titanium alloy AT3, with a complex composition, (in \$\phi): 2.5 Al, 0.4 Fe, 0.17 Si, 0.3 Cr, 0.1 O₂, 0.004 H₂, and 0.016 N₂. Samples 24 mm thick were submerged-arc welded with a 10 mm diameter tungsten electrode. Mechanical tests showed that the impact strength and elongation at normal and low temperatures change very little for either material while for atures (-196 C) with a rise in threshold energy. This was a result of increased and impact strength of the seam metal. Thus, the studies showed that the ductility duced by welding AT3 changes very little for different values of threshold energy and are analogous to the changes in technical titanium VT1-0. 3 figures,

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USSR

UDC: 669.29.295:621.791.052

GUREVICH, S. M., BLASHCHUK, V. Ye., ONOPRIYENKO, L. M. Electric Welding Institute imeni Ye. O. Paton, Academy of Sciences UkrSSR.
"Properties of Welded Joints of Alloys in the Systems Ti-V, Ti-V-Al and Ti-Zr-Al with High Oxygen Content"

Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1973, pp 6-8.

Abstract: This work presents a study of the mechanical and corrosion properties of welded joints of the alloys AK1 (Ti + 2.5% V), AK2 (Ti + 2.5% V + 3% Al) and AK3 (Ti + 5% Zr + 2% Al), containing 0.25-0.35% O. Rolled specimens 6 mm thick were studied. The plates were welded by an automatic single-pass argon-arc welding machine using infusable tungsten electrodes. It is shown that the strength, ductility and corrosion resistance of the welded joints are quite close to the figures for the base metal.

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- 33 -

UDC: 621.791.754

ZAGREBENYUK, S. D., GIREVICH, S. M., BLASHCHUK, V. Ye., Electric Welding Institute imeni Ye. O. Paton

"Heat Treatment of Welded Joints in VTZ-1 Alloy"

Kiev, Avtomaticheskaya Svarka, No 8, Aug 73, pp 69-70.

Abstract: A study is presented of the influence of heat treatment on the properties of joints in VTZ-1 alloy. Argon-arc welding with infusible electrodes was used to produce butt joints in the alloy in the following mode: δ = 3 mm, I = 300 a, U = 10 v, v = 31 m/hr; δ = 7 mm, I = 500 a, U = 12 v, v = 29 m/hr. The studies showed that the seams in VTZ-1 alloy had a primarily needle-like α^{I} structure. Heating of seams to 800° C has no significant influence on the phase composition. The results of mechanical testing after hardening and aging showed that the strength of the seams was maximal after hardening from 860° C with aging at 500° C for 3 to 5 hours. Increasing aging time decreases the seam strength due to coagulation of the finely dispersed phases.

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UDC 621.791.754:546.821

GUREVICH, S. M., BLASHCHUK, V. Ye., Ye. O. Paton Electric Welding Institute, LUK YANENKO, V. M., SHELENKOV, G. M., Suma Machine Building Plant

"Welding of Chemical Apparatus of AT3 Titanium Alloy"

Kiev, Avtomaticheskaya Svarka, No 11, Nov 72, pp 45-48

Abstract: This work studies the weldability and develops a production technology for welding of chemical apparatus of AT3 titanium alloy. The alloy studied had the following chemical composition: 2.5% AI, 0.41% Fe, 0.17% Si, 0.3% Cr, 0.1% 0, 0.004% H, 0.016% N. The butt joints were produced by argon-arc welding with a tungsten electrode by manual welding with trode. The welding technology developed was used in the production of hyuse of AT3 alloy allows interior volume to be increased by 15-35% over lined steel apparatus, increasing interior volume utilization factor from 74% to

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Mechanical Properties

USSR

UDC 620.17:669.295:621.791.052

GUREVICH, S. M., BLASHCHUK, V. Ye., PERADZE, T. A., and VAVILOVA, V. V., Institute of Metallurgy imeni A. A. Baykov

"Mechanical Properties of Weld Joints Made From Titanium Alloy AK-3 With an Increased Oxygen Content"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 73, pp 72-73

Abstract: The mechanical properties of AK-3 titanium alloy weld joints was studied for which the oxygen content was increased in the initial alloy by adding a titanium-oxygen alloy containing 23.63% exygen during the remelting process, which yielded an oxygen content of 0.31% in the final alloy. After argon-arc welding with a nonconsumable tangsten electrode the oxygen content in the seam metal was 0.384%. Strength properties were slightly lower after annealing than after welding, but ductility and reduction in area were increased after annealing while impact strength also improved after annealing. The conclusion was made that weld joints of AK-3 titanium alloy (Ti-Al-Zr system) with an increased oxygen content (0.35%) possess satisfactory mechanical properties. 2 tables, 8 bibliographic references.

1/1 .

USSR

UDC: 539.4

Blashchuk, V. Ye., Voynitskiy, A. G., Grabin, V. F., Gurevich, S. M., Kas'yan, V. V., Novikov, N. V.

"Deformation Resistance of AT-2 and AT-3 Titanium Alloys and Their Welded Joints at High and Low Temperatures"

Kiev, Problemy Prochnosti, No 7, 1972, pp 96-99.

Abstract: The deformation resistance of AT-5 and AT-2 alloys and seam metal is studied in the $400\text{-}700^\circ\text{K}$ temperature interval. The strength of the metal of seams in these alloys in the interval up to 500°K does not fall below 90% of the strength of the alloys. The temperatures dependences of strength and yield point of the metals of the seams and alloys are similar. At 700°K , the strength of the seam metal drops to 80% of the strength of AT-3 alloy. The ductility of the seam metals at normal and high temperatures is similar to the ductility of the base alloys, but falls below the ductility of the base metal at low temperatures. As temperature drops, the decrease in the value of coefficient α_K is greater in the alloys than in the seam metal, but throughout the entire temperature range

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- 60 -

UDC 620.17:669.295:621.791.052 GUREVICH, S. M., KORNILOV, I. I., BIASHCHIK, V. YE., VAVILOVA, V. V., and MAKSIMOV, YU. A., Institute of Metallurgy imeni A. A.

"Mechanical Properties of Welded Joints of Titanium Alloys With

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov,

Abstract: A study was made of the effect of oxygen on the weldability of Ti-V-O and Ti-V-Al-O alloys. Results are presented from estimating the mechanical properties of the welded joints at room temperature. Alloys of 8 compositions were manufactured for the investigation. Data from the chemical and gas analysis of the initial alloys, the results of the effect of oxygen on the mechanical properties of titanium alloys with 2.5% V and 2.5% V + 2% Al at room temperature. and the results of gas analysis of the weld metal were tabulated. From the data it is concluded that the mechanical properties, including impact toughness of the

USSR

GUREVICH, S. M., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 39-41

base metal and the welds of alloys with an oxygen content up to 0.3%, remain high. With 0.5% 0 in alloys od rhw Ti-V-O system the impact toughness of the weld is the same as that of the base metal. In alloys of the Ti-V-Al-O system with 0.58% 0, the plasticity drops sharply as a result of the occurrence of a second phase in the structure. Some microstructural characteristics of one of the alloys are presented. Preliminary conclusions are drawn that alloys of the Ti-V-O system with 2.5% V, and the Ti-V-Al-O system with a.5% V, and the 3-3.5% Al system are less sensitive to oxygen and be welded with an oxygen content up to 0.3% in the base metal.

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USSR

UDC 539.4

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MAKSIMOV, Yu. A., KORNILOV, I. I., VOYNITSKIY, A. G., BLASHCHIK, V. Yc., ZAGREBENYUK, S. D., Moscow, Kiev

"Mechanical Properties of Alloys of Titanium with Vanadium and Aluminum as Functions of Oxygen Content" ${\bf r}$

Problemy Prochnosti, No 11, 1971, pp 54-55.

ABSTRACT: The possibilities are studied for production of alloys of titanium with high contents of oxygen, but retaining high mechanical properties. It is shown that the addition of vanadium and aluminum produces oxygen-containing alloy with the required mechanical properties.

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- 75 -

USSR

UDC 621.791.011:546.821:546.833

BIASHCHUK, V. VI., GUREVICH, S.M., ZOTOVA, L.M., LANGER, N.A., GRINEVICH, V.V., and STENDER, N. V., Kiev

"Weldability and Corrosion Resistance of an Alloy of Titanium With 5% Ta"

Kiev, Avtomaticheskaya Svarka, No 6, Jun 71, pp 16-18

Abstract: Development of new chemical products, particularly those in which the basic component of the medium is hydrochloric acid, and introduction of rational technological processes requires the use of new corrosion-resistant structural materials. One of these is titanium and its alloys. An alloy of the system titanium - 5% tantalum with a stable alpha-solid solution has been designated for use in hydrochloric acid in the presence of oxidizers at an elevated temperature. Production of this alloy has been mastered and designated alloy grade 4204. The corrosion resistance of alloys 4204, VT1, and CT4 and their weld joints was studied in 18% HCl at 90°C and with a continuous flow of chlorine gas at the rate of 70 ml/min. It was found that alloy 4204 possesses higher corrosion stability than alloys OT4 and VT1. 4 figures, 1 table, 7 bibliographical references.

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- 59 -

UDC 620.17:669.295:621.791.052

GUREVICH, S. M., KORNILOV, I. I., BLASHCHUK, V. YE., VAVILOVA, V. V., and MAKSIMOV, YU. A., Institute of Metallurgy imeni A. A. Baykov

"Mechanical Properties of Welded Joints of Titanium Alloys With an Increased Oxygen Content"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 39-41

Abstract: A study was made of the effect of oxygen on the weld-ability of Ti-V-0 and Ti-V-Al-0 alloys. Results are presented from estimating the mechanical properties of the welded joints at room temperature. Alloys of 8 compositions were manufactured for the investigation. Data from the chemical and gas analysis the initial alloys, the results of the effect of oxygen on the mechanical properties of titanium alloys with 2.5% V and 2.5% of the weld metal were tabulated. From the data it is concluded that the mechanical properties, including impact toughness of the

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GUREVICH, S. M., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 39-41

base metal and the welds of alloys with an oxygen content up to 0.3%, remain high. With 0.5% 0 in alloys od rhw Ti-V-O system the impact toughness of the weld is the same as that of the base metal. In alloys of the Ti-V-Al-O system with 0.58% 0, the plasticity drops sharply as a result of the occurrence of a second phase in the structure. Some microstructural characteristics of one of the alloys are presented. Preliminary conclusions are drawn that alloys of the Ti-V-O system with 2.5% V, and the Ti-V-Al-O system with a.5% V, and the 3-3.5% Al system are up to 0.3% in the base metal.

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- 39 -

UDC 669.018.8

GUREVICH, S. M., KORNILOV, I. I., VAVILOVA, V. V., ZOTOVA, YE. M., BLASHCHUK, V. YE., and MAKSIMOV, A. M., Academy of Sciences USSR, Institute of Metallurgy imeni A. A. Baykov

"Study of Corrosion Resistance of Titanium Alloys in the Titanium-Vanadium-Oxygen and Titanium-Aluminum-Oxygen Systems"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr 71, pp 159-160

Abstract: The authors studied the resistance of alloys in the systems mentioned in the title with oxygen contents from 0.1 to 0.5 wt %, vanadium and aluminum contents constant at 2.5 and 3 wt. % respectively, and of their welded joints, to corrosion cracking under stress in fused MgCl₂. No intercrystalline cracks were observed visually or with a microscope. Photographs of the microstructure of welded joints of the metal are presented.

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Welding

USSR

UDC 621.791.856.3.011:546.821

GUREVICH, S. M., Doctor of Technical Sciences, BLASHCHUK, V. Ye., Engineer, ZAGREBENYUK, S. D., Engineer, KORNILOV, I. I., Doctor of Technical Sciences, GLAZOVA, V. V., Candidate of Chemical Sciences, and MAKSIMOV, Yu. A., Engineer

"Weldability of Titanate Alloys with Increased Content of Oxygen"

Kiev, Avtomaticheskaya Svarka, No 5, May 71, pp 72-73

Abstract: The weldability of alloys of the systems titanium-vanadium and titanium-vanadium-aluminum with 0.25-0.35% of 0 parts by weight was investigated at the Electric Welding Institute imeni Ye. O. Paton and the Institute of Metallurgy imeni A. A. Baykov, in order to determine the possibility of increasing the oxygen concentration in weldable titanium alloys and the conditions under which welded joints with satisfactory properties, even with an increased O content, can be produced. A demonstrated comparison of mechanical properties of welded joints of the investigated alloys and alloys of the system titaniummolybdenum-zirconium shows that only the alloys with vanadium possess high endurance and plasticity at increased O concentration. Preliminary experiments proved the possibility of using titanium with a raised O concentration for producing satisfactorily weldable titanium alloys. One figure, one table.

1/1

UDC 621.791.756.011:546.821

GUREVICH, S. M., BLASHCHUK, V. Ye., NOVOKOV, V. I., and LEBEDEV, V. K., Institute of Electric Welding imeni Ye. O. Paton

"Local Thermal Processing of Welded Vessels Made of AT3 Titanium Alloy"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 71, pp 12-14

Abstract: A study was made of the possibilities for removing the residual stresses in the weld seams of AT3 vessels and in the area near the seams by local thermal processing. Because there were no available data on the residual stresses in the AT3 alloy, the nature and amount of these attesses in welded joints of thick sections of the metal had to be studied through experimentation, which was done on approximately square specimens of the alloy. Preliminary work, consisting of heating the specimen to 600-650°C for two hours, then cooling, was to determine the extent to which the residual stresses in the welded seam and its surroundings were removed and whether local heating could reduce the longitudinal residual stresses. The latter received special attention since cracks in titanium alloy welds are usually at right angles to the seam. The residual stresses were measured with DK-20 tensometers. It is conlouded that local thermal treatment

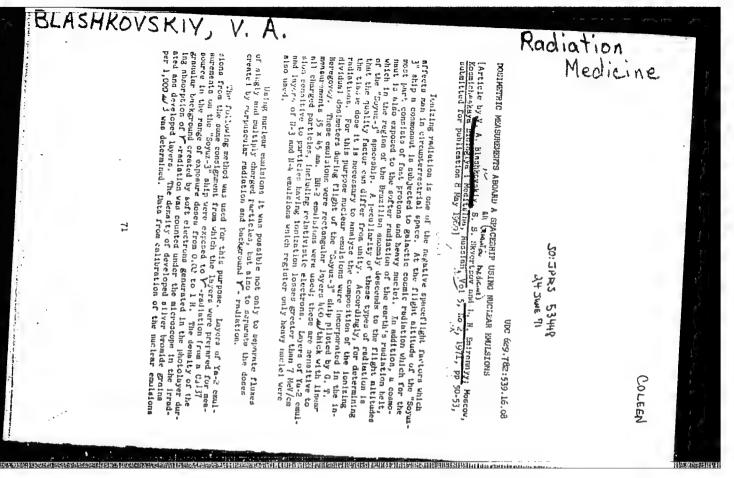
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GUREVICH, S. M., et al, Avtomaticheskaya Svarka, Kiev, No 2, 1971, pp 12-14

is effective in reducing or eliminating residual longitudinal stresses, and such treatment is recommended for circular welds on vessels. A table of the stresses measured with and without local thermal processing is given.

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UDC 621.315.592

BLASHKU, A. I., VOLTAKS, B. I., BURDIYAN, I. I., DZHAFAROV, T. D., RZAYEV, M. A.

"Temperature and Concentration Dependencies of the Diffusion Coefficient of Zinc in Gallium Anti-nide"

Leningrad, Fizika i Tekhnika Poluprovodníkov, Vol 6, No 3, 1972, pp 467-472

Abstract: In order to exclude the concentration dependence of the diffusion coefficient in each separate sample and discover the migration mechanism of zinc in gallium antimonide, a study was made of diffusion by the isoconcentration diffusion method. The chemical diffusion of zinc in GaSb specimens alloyed with tellurium with different concentrations was also investigated.

Radioactive isotopes were used to investigate the chemical and isoconcentration diffusions of $^{65}\mathrm{Zn}$ in n-type and p-type gallium antimonide alloyed with tellurium or zinc in the temperature range of 510-680° C. During chemical diffusion, the effective diffusion coefficient (D $_{
m eff}$) depends linearly on the

concentration. As follows from experiments in electron transfer, zinc in gallium antimonide is shifted in the form of positive ions with an effective charge close to +1. A model is proposed for explaining the observed behavior of zinc in gallium antimonide.

During chemical diffusion, the values of $\mathfrak{D}_{\text{eff}}$ are less than during

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BLASHKU, A. I., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 3, 1972, pp 467-472

isoconcentration diffusion, and with an increase in temperature, the difference in the values of D decreases. It was proposed that the observed decrease in D during chemical diffusion may be the result of the effect of braking internal electric fields occurring during diffusion of zinc in n-type gallium antimonide. The effect of the zinc vapor pressure on diffusion was also intended in the diffusion mechanism is of a dissociative nature. The decrease in the effective diffusion coefficient in n-type GaSb heavily alloyed with the effect of both electron-hole interaction and complex formation between the zinc and tellurium on diffusion [A. I. Blashku, et al., FTP, No 5, 755, 1971].

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UBSR

UDC: 621.373.072.6

BLATT, A. A.

"Automatic Frequency Control of a Sutton Tube With a Discriminator Based on Two Cavity Resonators"

Sb. tr. Leningr. in-t inzh. zh.-d. transp. (Collected Works of the Leningrad Institute of Railway Transportation Engineers), 1971, vyp. 316, pp 3-10 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D382)

Translation: An investigation is made of frequency stabilization of a Sutton tube with the use of AFC with a discriminator based on two cavity resonators. The dynamic properties of the system are determined, and the errors which arise in the system due to the effect of various destabilizing factors are evaluated. Bibliography of seven titles. Resumé.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

Luminescense



USSR

UDC 661.143:546.431'821'185(088.8)

GUGEL', B. M., LODYGIN, N. A., GOLUBEV, I. F., KHIZHA, V. S., BLYAKHMAN, E. A., KUTSENKO, N. A., SIDOROV, M. D., ZVYAGIN, V. B., VAKHRAMOV, V. P., AGAPOV, V. I., GARKUSHA, V. A., KHUSAINOVA, R. S.

"Phosphor for Low-Pressure Luminescent Tubes"

USSR Author's Certificate No 336342, filed 19 May 70, published 22 May 72 (from RZh-Khimiya, No 2(II), Feb 73, Abstract No 2L148P)

Translation: In order to increase the light yield of the tubes, the proposed phosphor includes the following: barium-titanium phosphate, calcium halophosphate, strontium and magnesium orthophosphate and magnesium fluorogermanate. The barium-titanium phosphate, the calcium halophosphate, the strontium orthophosphate, magnesium orthophosphate and magnesium fluorogermanate are introduced in the following proportions by weight: 4-6:2.5-4:0.4-0.8:0.13-0.25 respectively. As an example, let us take weighed samples of 4.36 kg of barium-titanium phosphate, 3.84 kg of calcium halophosphate, 0.40 kg of magnesium-strontium orthophosphate and 0.24 kg of magnesium fluorogermanate. Put them in a porecelain cylinder and mix for 1 hour. A suspension is prepared from the mixture obtained and it is applied to the tubes.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

ussr UDC 620.17

AZARKEVICH, L. B., BLAYKHMAN, YE. M., MAKOVETSKIY, V. A., and MIL'KOV, V. G.

"A Rubber-Like Optically Sensistive Material on the Basis of Oligodiene Epoxy PDI-3A"

Tallin, VII Vses. Konf. po Plyarizats .- Optich. Metodu Issled. Napryazh., 1971 - Sbornik (Seventh All-Union Conference on the Polarization-Optical Method of Stress Research -- Collection of Norks), Vol. 2, 1971, pp 106-109 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2V1656)

Translation: A report is given on the composition and opticomechanical properties of optically sensitive materials made of the oligodiene epoxy PDI-3A in combination with epoxy resins. When applied as photoelastic coatings such materials make possible the measurement of plastic deformations from 2 to 30%. A calibration diagram is presented for one of the materials. Samples from the obtained materials were subjected to repeated loadings (stretching or pure fracture), and on the basis of 1.5 -- 2.0 thousand cycles the stability of the opticomechanical properties of the photoelastic coating was shown. In addition, these materials possessed low optical sensitivity. The last two properties are particularly useful in the measurement of accumulated deformations during repeated loadings. 1/2

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

UDC: 612.81.08

BLAYVAS, A. S., Laboratory of Analyzer Physiology (Headed by V. G. Samsonova), Institute of Higher Nerve Activity and Neurophysiology, USSR Academy of Sciences, Moscow

"A Method of Stimulating Conducting Brain Paths by an Electric Current"

Leningrad, Fiziologicheskiy zhurnal SSSR imeni I. M. Sechenova, No 10, vol 58, 1972, pp 1633-1636

Translation: In modern experimental neurophysiology, the stimulation of conducting paths in the depths of the brain is usually accomplished by bipolar stimulating electrodes (SE) with small (up to 1 mm) interelectrode distances, without taking into account the shape and dimensions of the structure to be investigated (/7,10,12/and others). Such small distances are used to avoid an "overflow" of current into neighboring portions of the brain tissue that may cause excitation of nearby cell groups or fibers of a different type. Similar methods of stimulation are fully justified for studying the overall evoked potentials (EP). In investigating the reactions of individual neurons, however, such SE may turn out to be stronger in their effect on nearby fibers and weaker for fibers at a distance even if the latter are at the limits of the stimulating structure.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410011-0"

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BLAYVAS, A. S., Fiziologicheskiy zhurnal SSSR imeni I. M. Sechenova, No 10, vol 58, 1972, pp 1633-1636

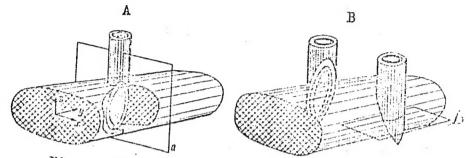


Fig. 1. Schematic Drawing of the Electrodes

A — Electrode 13K14 in the optical tract of the cat. On the end of the tract, the direction of the stereotaxic x, y, and z axes is indicated; E — Schematic of the "two-trunk" electrode. Planes a and b are explained in the text.

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